

REMARKS

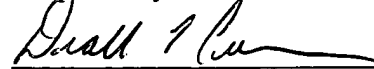
Entry and consideration of this Amendment are respectfully requested.

To accentuate the differences between the claimed invention and previously applied references, Applicant submits the following remarks:

In U.S. Patent No.5,685,284, feedback control needs to be temporarily suspended when the input resistance is changed. Therefore, since frequent input resistance change increases pollutant emissions, it is problematic to conduct fault detection diagnosis after once executing detection for wire breakage. As a result, if wire breaking occurs during driving after the detection process, it is impossible to inform the driver of the necessity of repair at an early stage.

In Claims 1 and 5 of the present invention, for example, since a fault diagnosis portion precisely distinguishes whether an O2-sensor is in an inactive state or in a wire breakage state, and changes input resistance each time the inactive state is entered, a consequence of the claimed arrangement is that it is possible to successively detect wire breakage without increasing pollutant emissions. That is, the present invention can avoid increased pollutant emissions yet can allow diagnostics anytime the O2-sensor seems to be in the wire breakage state. None of the cited references can be expected to achieve the above-mentioned effect of the present invention.

Respectfully submitted,



Diallo T. Crenshaw
Registration No. 52,778

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: November 3, 2003